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Biology Standard  
B.6.b.



# Ecosystem Change in California

## California Education and the Environment Initiative

Approved by the California State Board of Education, 2010

### The Education and the Environment Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency  
California Natural Resources Agency  
Office of the Secretary of Education  
California State Board of Education  
California Department of Education  
California Integrated Waste Management Board

### Key Leadership for the Education and Environment Initiative:

**Linda Adams**, Secretary, California Environmental Protection Agency  
**Patty Zwarts**, Deputy Secretary for Policy and Legislation, California Environmental Protection Agency  
**Andrea Lewis**, Assistant Secretary for Education and Quality Programs, California Environmental Protection Agency  
**Mark Leary**, Executive Director, California Integrated Waste Management Board  
**Mindy Fox**, Director, Office of Education and the Environment, California Integrated Waste Management Board

### Key Partners:

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### Office of Education and the Environment

1001 I Street • Sacramento, California 95812 • (916) 341-6769

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# Contents

## **Lesson 1** Fields of Green and Gold

- 1 Native Grassland Invaded by Nonnative Grasses . . . . . 2

## **Lesson 2** Surveying an Ecosystem for Evidence of Change

- 2 California Grassland . . . . . 3
- 3 Ecological Succession 1 . . . . . 4
- 4 Ecological Succession 2 . . . . . 5
- 5 Ecological Succession 3 . . . . . 6
- 6 Ecological Succession 4 . . . . . 7
- 7 Rancho Grassland Study Site . . . . . 8

## **Lesson 3** Climate Clues in Tree Rings and Pollen Cores

- 8 Tree Rings . . . . . 9

## **Lesson 4** Examining Human Use of the Grasslands

- 9 Undisturbed Area in San Ramon Valley . . . . . 10
- 10 San Ramon Valley After Development . . . . . 11
- 11 Cumulative and Synergistic Effects on Grasslands . . . . . 12

## **Lesson 5** Grassland Invaders

None required for this lesson.

## **Lesson 6** The Management of Ecosystems

- 12 Ecosystem Management . . . . . 13



## VA #1 Native Grassland Invaded by Nonnative Grasses





## VA #2 California Grassland





## VA #3 Ecological Succession 1

### Grassland fire





## VA #4 Ecological Succession 2





## VA #5 Ecological Succession 3

### Early regrowth after fire





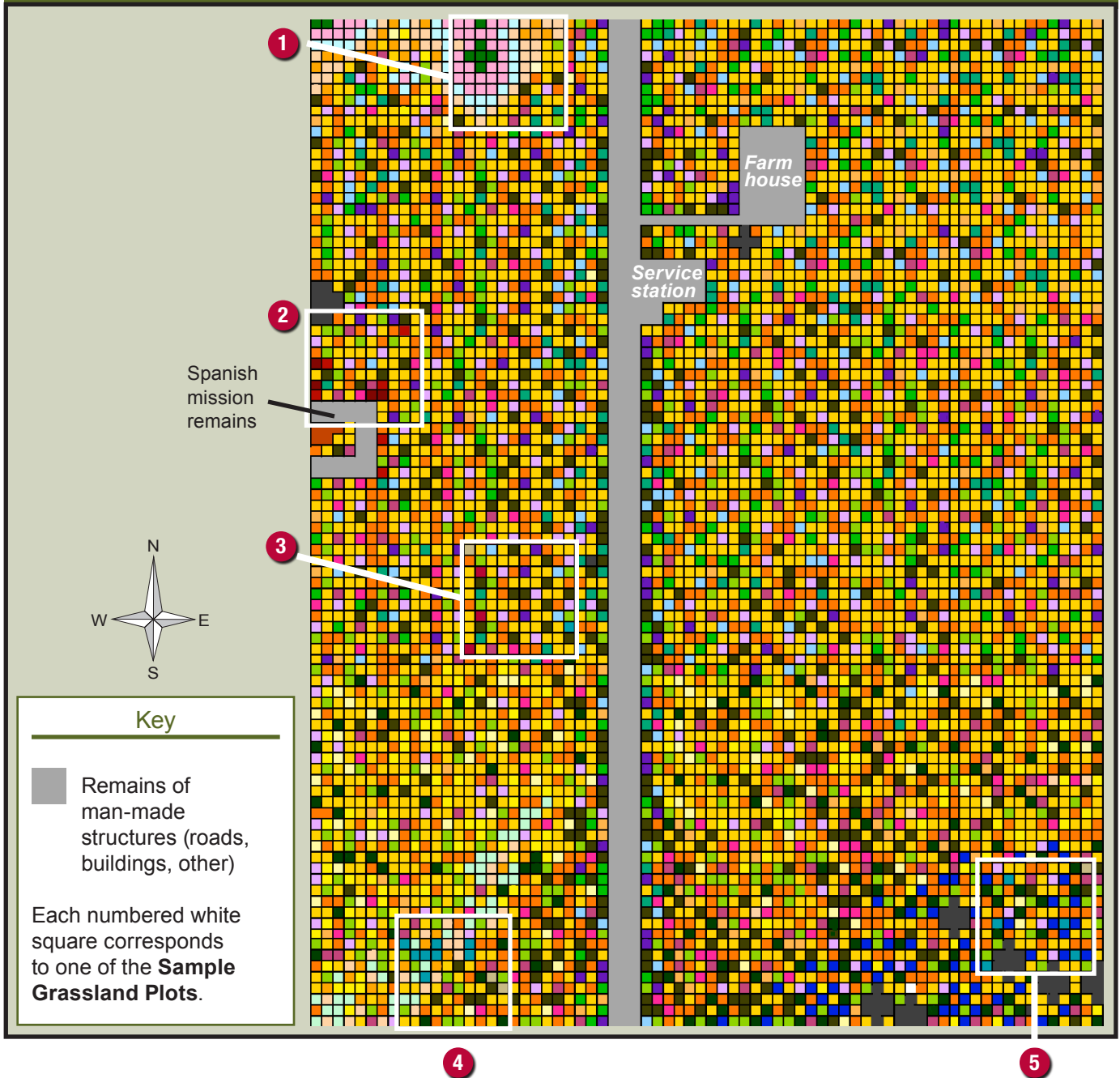
## VA #6 Ecological Succession 4

### Recovered grassland





## VA #7 Rancho Grassland Study Site





## VA #8 Tree Rings





## VA #9 Undisturbed Area in San Ramon Valley



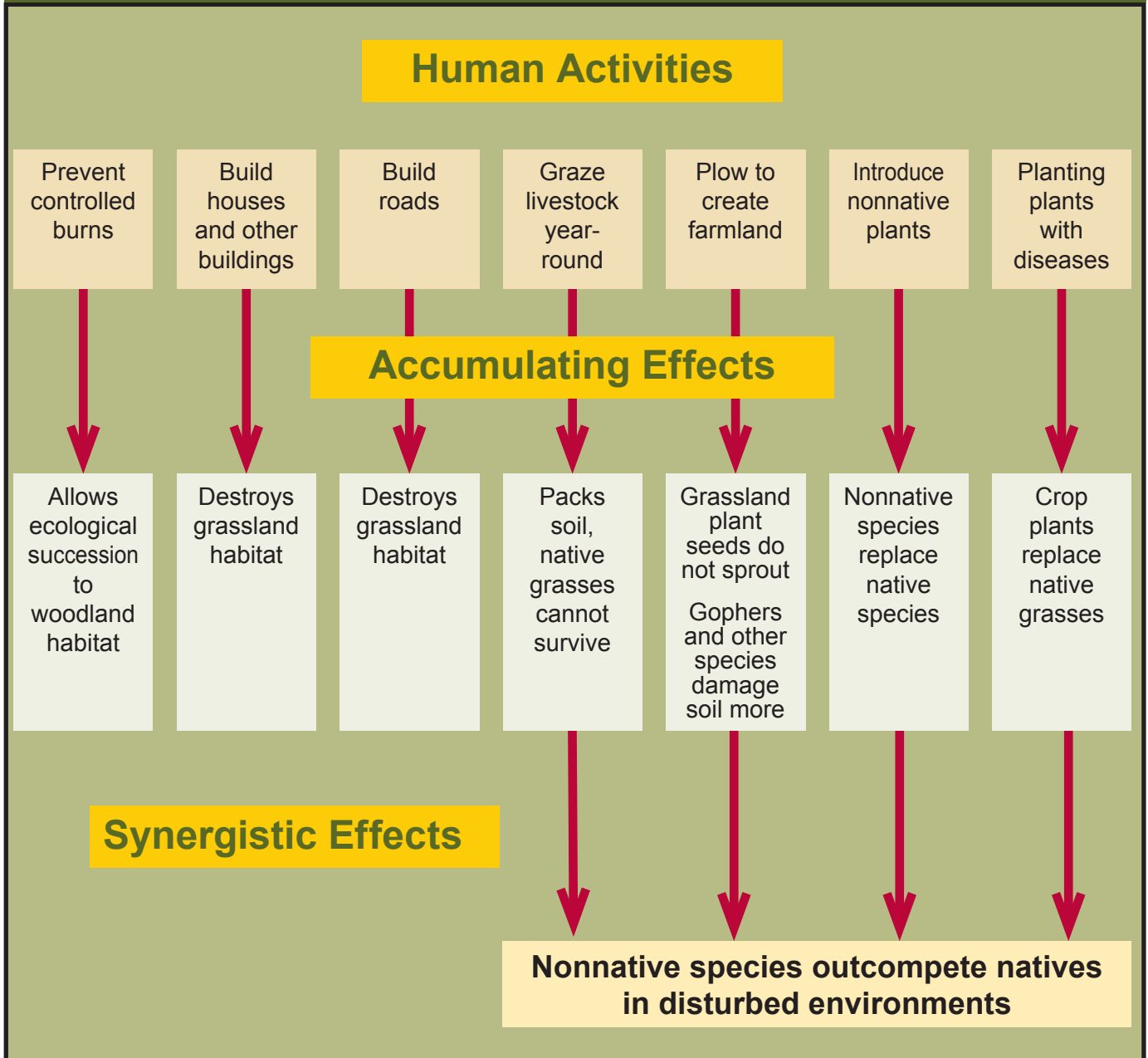


## VA #10 San Ramon Valley After Development





## VA #11 Cumulative and Synergistic Effects on Grasslands





## VA #12 Ecosystem Management

**Ecosystem management:** Actions and decisions of individuals, organizations, and government entities related to maintaining ecosystems, and providing ecosystem goods and ecosystem services for current and future generations.

### Part 1

**Instructions:** Several different roles are involved in making decisions about ecosystem management. Identify at least three types of people or agencies within each category who make decisions about ecosystem management.

**Decision makers:**

decide what the objectives are

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**Analysts:**

predict the consequences of different management strategies

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**Stakeholders:**

have interest in the objectives, but do not have ownership or authority to make decisions

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**Ecosystem Management**













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